

INTERNATIONAL BULLETIN

OF PLANT PROTECTION

1936

No. 8

DISCOVERIES AND CURRENT EVENTS *

Argentine Republic: Further Contribution to the Study of the Disease Known as 'Podredumbre de las Raicillas' of Orange Trees †

The rot of orange rootlets ('podredumbre de las raicillas') first drew the attention of citrus growers in 1932, in the zone of Bella Vista, province of Corrientes.

The disease started in the southern part of the district of Bella Vista where exist many orchards of oranges grafted on stocks of bitter fruit. Certain of these orchards were 18 years old and in many cases showed symptoms of the disease, though it also was evident on plants 6 years old.

The rot, however, was first reported on sweet oranges, lemons or mandarin oranges grafted on stocks of bitter fruit. Afterwards it was observed on plants grafted with 'lima de Persia' and 'naranjo trébol'.

The increased diffusion of this disease seriously damaged the orchards of Bella Vista so that the Ministry of Agriculture installed a phytopathological laboratory in the National Nursery in this region where, for the last two years, the cause of the disease has been studied and also methods for preventing and controlling it.

The first manifestation of the disease is in the retarded development of the plant; the twigs are small and with short internodes, the size of the leaves is much smaller than usual and they are arranged in rosette form and fall away from the extremities of the branches towards the base. Many of the leaves appear to be chlorotic (with the principal and secondary ribs yellow and the intermediary parts green) and others spotted or attacked by foliocollosis (principal and secondary ribs green and intervening parts yellow), both symptoms being noticeable on the same plant. The branches, after losing the leaves, dry up by degrees and end by being covered with numerous black fructifications of the fungus *Colletotrichum gloeosporioides*, Penzig.

If the diseased plants bear fruit, this is reduced in size, is yellow and falls prematurely. The diseased plants clearly bear more fruit than the healthy

* Under this and the next heading the countries are arranged in French alphabetical order.

† Communication from Mr. HORACIO A. SPERONI, 'Ingeniero Agrónomo', Chief of the Plant Pathology Laboratory, Bella Vista, province of Corrientes, transmitted by the official correspondent of the Institute, Mr. JUAN B. MARCHIONATTO, 'Ingeniero Agrónomo', Director of 'Sanidad Vegetal', Ministry of Agriculture, Buenos Aires, Argentine Republic.

trees though in no case does the fruit attain normal proportions. In numerous cases, also, may be observed a growth of the bud graft proportionally much greater than that of the stock and the plant afterwards begins to decline.

The disease begins in the finest rootlets, only in very advanced cases does it appear on the secondary roots. The diseased rootlets show a dark bark, spreading very easily to the central plerome. In this state it is always possible to meet with bark tissues invaded by fungi and bacteria though these organisms, in numerous experimental tests, to not appear to behave as pathogenic.

Repudiating the possibility of it being a parasitic disease, studies were directed towards determining the influence of various soil factors in the appearance of the disease and it was verified that the rot of citrus rootlets is due to high acidity of the soil favoured by different factors which may summarised thus: (a) the disappearance of the lime and other neutralising bases as a consequence of heavy rains; (b) the undue use of fresh farm manure which is given to the plants without any process of preventive fermentation; (c) the addition of unsuitable manures (superphosphates, etc.); (d) the use of mud and residues of bogs and salt marshes with high acidity.

Chemical analyses of these soils showed the existence of an excess of iron and aluminium salts in relation to the other elements, and the behaviour of these salts, which may change the trivalent ions of hydrogen by the cations of basic salts resulting in two serious consequences: (1) unfavourable conditions produced by the concentration of hydrogen ions; (2) toxic effect of the iron and aluminium elements, which increase with the diminution of neutral action in the soils.

The harmful action effects primary the meristematic tissues which, in dying, open the way for the penetration of fungi and bacteria which live saprofitically in the soil.

Other factors, no less important, and which also favour the development of the rot of citrus rootlets have been evident in these soils, namely: excess of iron and nitrogen, the proximity of the impermeable subsoil, the lack of drainage, planting too deep, absence of green manures and exhaustion of the soil by repeated cropping.

Taking into account the cause of the disease and the multiple factors which favour its development, trials were made with a view to control and positive results were obtained using the following methods:—

(1) Use of injections of iron sulphate at the rate of 10 cm³ and 10 % (or in crystals) and liming afterwards with 3 to 4 kilos of slaked lime per plant. This treatment gave results in 90 % of cases treated.

(2) Liming the plants at the rate previously indicated and watering same with a solution containing 250 to 300 grammes of iron sulphate at the rate of 20 litres per plant.

As a general treatment against the rot of citrus rootlets is recommended: drainage; liming at the rate indicated; suppression of fresh farm manure; planting on high ground; all work of cultivation in accordance with the principles recommended by technique.

Eritrea: Locusts *

During the months of May and June, 1936, no locust have been reported in the Colony.

Mozambique: Locust Movements (*Nomadacris septemfasciata* and *Locusta migratoria migratorioides*) †

Below is a summary of the observations made during the month of March, 1936.

In respect of the infested areas, the locust situation of the Colony remains the same as reported in the previous communication, namely, extension of the infestation in the North, the South widely infested, the regions of the Zambesi considerably infested.

During the month more than 1 593 hopper bands were destroyed by mechanical and chemical means. The control continues in the areas infested.

The existence, in certain regions, of locust destroying birds has greatly contributed towards reducing the density of the bands.

The beginning of the appearance of a disease is causing mortality among locusts and if the humid conditions develop their effect on increase of the disease will favour the extermination of the insects.

Southern Rhodesia: Locust Invasion, 1932-36 §

Monthly Report No. 42. May, 1936.

During May the Red Locust (*Nomadacris septemfasciata*, Serv.) has been present in the colony mainly in the hopper stage.

The following districts have included hopper infested localities, namely:—Chibi, Mazoe, Salisbury, Martley and Charter.

Hoppers were present up to the end of the month in some localities.

From the 19th flying swarms were reported in the districts of Mtoko, Ndanga and Chibi – the first mentioned swarms having come from Portuguese East Africa.

Every effort has been made to reduce the hoppers to a minimum in all accessible localities and few winged swarms are expected to develop within the colony.

On the whole the outlook is very hopeful.

The present swarm cycle of the species appears to be at a low ebb in this part of Africa.

* Communication from the official correspondent of the Institute, Dr. Rolando GUIDOTTI, Chief of the Agricultural Bureau of Eritrea, transmitted by the Government of the Colony.

† Communication from Mr. JÚLIO GARDÉ ALFARO CARDOSO, Chief of the Entomological Section, Lourenço Marques, transmitted to the Institute by the 'Repartição Técnica de Agricultura' of the Colony.

§ Communication from the official correspondent of the Institute, Mr. RUPERT W. JACK, F. E. S., Chief Entomologist, Agricultural Laboratory, Department of Agriculture, Salisbury, Southern Rhodesia.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Algeria.* — By Decree of the Governor General, dated 28 April, 1936, imports, by land, into Algeria of plants, plant products intended for cultivation and cut flowers originating from Tunis, will be carried out only by the custom-houses of Lacroix, Ghardimaou and Rhilane and under the following conditions:—

The consignments should be accompanied by a copy of the bill of lading or, when they do not originate from an establishment subject to State control, a declaration by the sender stating the nature, the number and variety of the objects concerned and, in all cases, a certificate of phytopathological inspection.

The consignments will travel under cover of unguaranteed receipts carrying, in addition to the obligation to conform to the custom regulations, the engagement to present to the agents of Plant Protection Service the wagons or packages of plants sealed by the custom-house on their entry into Algeria, with a view to guaranteeing their identity.

The consignments, at the choice of the importers, will be sent by the custom-house to Bona, Philippeville, Constantine, Bougie, Algiers, Mostaganem, Marnia or Oran, to be examined by the local agent of the Plant Protection Service under the conditions provided for by the Decree of 14 February, 1922, on the phytosanitary police in Algeria.

The fact, in respect of the importers, of not presenting the consignments to the agents charged with sanitary inspection will result in forfeiture, in the future, of the right to introduce plants and plant products into Algeria and this without prejudice to the penalties provided for in Article 471, 13^o of the Penal Code.

The consignments referred to in the present Decree, which circulate without documents and without being sealed, will be seized and impounded in conformity with the dispositions contained in article 11 of the Decree of 14 February, 1922, without prejudice to the other penalties provided for in that Decree.

Germany. — According to the Ordinance of 7 March, 1936, relative to the officials seals, the Service of phytosanitary inspection will adopt, as from 1 October, 1936, a single seal which will bear the name and the emblem of the country above the word 'Pflanzenbeschau'. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1936, Bd. VIII, Nr. 4, S. 102, 1 Abb.).

* * An Ordinance of 20 April, 1936, relative to the protection of natural sites, draws attention, *inter alia*, to the fact that the use of egg shells filled with phosphoric preparations for the control of rooks and magpies, is not permitted without special precautionary measures. (*Ibid.*, S. 96-99).

* Communication from the official correspondent of the Institute, Mr. MARCEL DELASSUS, Chief Inspector of the Service of Plant Protection and Phytopathological Inspection, Government General of Algeria, Algiers.

* * By Ordinance of the Corporation of Horticulture and Viticulture, dated 22 April, 1936, relative to the control of the needle cast of Douglas fir [*Rhabdocline pseudotsugae*], it is forbidden to cultivate, in nurseries and horticultural undertakings, all forms of *Pseudotsuga taxifolia* var. *glauca*. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Anfang Mai 1936, 16. Jahrg., Nr. 5, S. 55).

* * By Decree of 6 May, 1936, modifying the provisions in force relative to the use of violent poisons, it is forbidden to use mobile disinfection chambers unless for the disinfection of consignments of vegetables. The Ministers of Agriculture and of the Interior will establish a mutual agreement on the rules to be followed in this respect. (*Reichsgesetzblatt*, Teil I, Berlin, 15. Mai 1936, Nr. 49, S. 444).

* * The Ordinances of 6 and 20 May, 1936, referring to the application of the measures concerning the use of very poisonous preparations, establish that the use of travelling disinfection chambers is prohibited except in the case of disinfection of consignments of plants.

In respect of the treatment of vines with arsenical preparations [see this *Bulletin*, 1935, No. 7, p. 157] the use of preparations in powder form after 30 June is forbidden. (*Amtliche Pflanzenschutzbestimmungen*, 1. Juli 1936, Nr. 4, S. 99-100).

Germany (Lübeck). — By Police Ordinance of 30 May, 1936, eradication of thistles is rendered compulsory and should be undertaken each year and continued up to 15 July. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1936, Bd. VIII, Nr. 4, S. 102).

Germany (Oldenburg). — By Decree of 21 April, 1936, concerning the prevention of the spreading of *Galinsoga parviflora* ('Franzosenkraut'), the control of this weed is made compulsory. The provisions are similar to those adopted by the Free City and State of Lübeck by Police Ordinance of 19 March, 1935 [see this *Bulletin*, 1935, No. 7, p. 157]. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1936, Bd. VIII, Nr. 4, S. 103).

* * By Decree of 9 May, 1936, the establishments for clearing and disinfecting seeds are subjected to official supervision.

The provisions are, in general, similar to those adopted by Decree of 4 June, 1934, in Prussian Saxony [see this *Bulletin*, 1934, No. 11, p. 248].

Owners of public seed cleaning establishments are obliged to declare the fact to the authorities of the district and to apply for an authorisation. The authorisation will be granted only to establishments equipped with disinfection installations.

Owners who have received the official authorisation should put up a special notice in their premises, the model of which is given in an appendix to this Decree.

A Notification of the same date, concerning the application of the present Decree, fixes, *inter alia*, the duties to be payed by owners of these establishments in order to obtain the official authorisation. (*Ibid.*, S. 103-107).

Germany (Prussia). — By Police Ordinance of 22 May, 1936, relative to the control of asparagus diseases and pests, provisions corresponding to those already adopted in the province of Hanover [see this *Bulletin*, 1935, No. 2, pp. 34-35] have been introduced. The aerial parts of the asparagus plants should be cut down and burnt before 30 November, the ends of asparagus stalks which remain in the fields should be removed in the spring before 30 April. It is proposed to form, in the communes where the area cultivated with asparagus exceeds 1 hectare, commissions of persons interested who will assist the police authorities in carrying out the control measures. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1935, Bd. VIII, Nr. 4, S. 107-108).

Germany (Thuringia). — The Notification of 31 March, 1936, concerning the exportation of plants, fixes the duties that should be payed for the certificate of health and origin and those which are required for inspection by the officials of the Plant Protection Service. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1936, Bd. VIII, Nr. 4, S. 108-109).

* * By Notification of 15 June, 1936, concerning the control of horticultural and botanical establishments, nurseries and gardens which are officially recognised as corresponding to the conditions established by the International Phylloxera Convention of Berne, the Central Plant Protection Station, Jena is entrusted with the supervision which should be exercised for the first time at the request of those interested and, afterwards, regularly every three years. (*Ibid.*, S. 109-111).

England and Wales. — With the object of preventing the introduction of the cherry fruit fly [*Rhagoletis cerasi*] the Importation of Raw Cherries Order of 1936, dated 29 April, 1936 contains restrictions on importation of these fruits grown in Spain, France and Germany. (*Statutory Rules and Orders, 1936, No. 384. Destructive Insect and Pest, England. The Importation of Raw Cherries Order of 1936. Dated April 29, 1936.* London, 1936, 4 pp.).

Argentine Republic. — The Decrees Nos. 77.115 and 77.116 of 22 February, 1936, confirm the provisions contained in the Decrees Nos. 74.281 and 74.335 of 27 December, 1935 [see this *Bulletin*, 1936, No. 6, p. 125]. (*Boletín Oficial de la República Argentina*, Buenos Aires, 15 de mayo de 1936, año XLIV, núm. 12.563, pág. 564).

Australia (Commonwealth of). — By Quarantine Proclamation No. 14P of 25 March, 1936 modifying the Quarantine Proclamation No. 9P [see this *Bulletin*, 1936, No. 7, pp. 153-154], is prohibited the importation into Australia of all plants or parts of plants (including the fruit but exempting the seeds) of the

suborder or tribe Pomeae of the order Rosaceae which were grown in any country in which pear blight or fire blight (*Bacillus amylovorus*) exists. The apples grown in districts in New Zealand in which fire blight does not exist may be imported subject to the conditions prescribed in the Regulations. (*Commonwealth of Australia Gazette*, Canberra, 20th March, 1936, No. 31, p. 516).

Australia (Territory of Norfolk Island). — The Ordinance No. 9 of 1936, dated 18 March, 1936 and which may be cited as the Noxious Weeds Ordinance 1936, amends the Noxious Weeds Ordinance 1916. (*Commonwealth of Australia Gazette*, Canberra, 19th March, 1936, No. 30, pp. 471-472).

Belgium. — With a view to preventing the spread of the Colorado beetle (*Leptinotarsa decemlineata*) it is forbidden, by Ministerial Decree of 18 May, 1936, to transport haulms of potatoes for any reason or utilisation whatsoever. (*Monsieur Belge*, Bruxelles, 30 mai 1936, 106^e année, n° 151, p. 4023).

* * By Ministerial Decree of 20 May, 1936, the importation into Belgium of fresh cherries originating from Germany, Spain, France and Italy, is authorised on condition that, after examination by the Special Phytopathological Service of Belgium at the expense of the importers, the consignments are ascertained to be free from cherry fruit fly (*Rhagoletis cerasi*).

Importation may only be carried out by the custom-houses of Erquelines, Montaleux (Mouscron), Montzen, Antwerp (4th Bureau) and Brussels (1st and 3rd Bureaux).

Consignments not recognised as being free from *Rh. cerasi* by the custom-houses of Erquelines, Montaleux (Mouscron) and Montzen will be returned.

Consignments not recognised as being free from *Rh. cerasi* by the custom-houses of Antwerp and Brussels will be burnt at the expense of the importer.

All producers or holders of cherries who observe the presence of *Rh. cerasi* in their orchards or warehouses are obliged immediately to make a declaration to that effect to the burgemaster of the commune who will inform the Minister of Agriculture by telegramme. (*Ibid.*, 4 juin 1936, n° 156, p. 4101).

Chile. — By Decree No. 226 of 31 March, 1936, cotton seed imported for oil extraction or unginned cotton, also the receptacles and packing containing same, if they come from regions where the pink cotton bollworm (*Platyedra gossypiella*) exists, should be fumigated or treated with heat before disembarkation in order to kill all insects contained in the consignment. The phytopathological authorities of the exporting country will state, in the health certificate which should accompany the consignment, that this disinfection has been carried out. (Art. 1).

In cases where it is ascertained that living insects are contained in the seed on its arrival in the country in spite of the fact that it has been expedited in conformity with the dispositions indicated in the above mentioned article, the consignment should be fumigated and the operation commenced within 24 hours following disembarkation, the locality where this takes place being situated at the shortest distance possible from the wharf. If the fumigation cannot take place

within the period required and under the above mentioned conditions, the Phytopathological Service will prohibit the disembarkation of the consignment or will have it destroyed 24 hours after disembarkation.

If the certificate mentioned in Art. 1 cannot be obtained, the consignment should be fumigated on board before disembarkation in a Chilian port for at least 12 hours. If the treatment is not efficacious, it should be repeated either on board or in a lighter or barge and the disembarkation of the consignment will not be authorised so long as the presence of living insects is determined. Fumigation on board is not compulsory on condition that it is carried out on lighters or barges and that discharging on these lighters or barges and fumigation take place at a distance of at least 500 metres from the coast. As in the preceding case, the consignment cannot be landed so long as the presence of living pink cotton bollworms or other insects is determined (Art. 3).

Consignments arriving by land, if not accompanied by the certificate of fumigation mentioned in Art. 1, will be sent back to the country of origin within a minimum period of time which will be fixed by the Phytopathological Service, or destroyed if not returned within the period fixed. (Art. 4).

In all cases the seed should be utilised immediately after arrival and should be given precedence over all others. The preparation of this seed should not be suspended until the total quantity has been treated. (Art. 5).

The above mentioned measures are not required for seed coming from countries where the pink cotton bollworm does not exist; the seed will be subject to the general dispositions relative to the importation of seeds. In this case, it should be stated on the accompanying certificate that the pink bollworm does not exist in the region of origin. (Art. 6).

The health certificate accompanying the cotton seed intended for oil extraction coming from regions where the 'arreatado' (*Dysdercus* sp.) exists should clearly specify that the consignment does not contain this insect. If the insect does not exist in the country, the fact should be noted on the certificate. (Art. 7).

The seed will be examined on board, at the port of destination, by the Phytopathological Service. (Art. 8).

If the presence of living *Dysdercus* is determined, the dispositions contained in Art. 2 will be applied. (Art. 9).

Unginned cotton imported from regions where the pink cotton bollworm or *Dysdercus* exists, should conform to the conditions established in Articles 1, 2, 3, 4 and 5. (Art. 10).

The importation of cotton seed will not be permitted unless contained in sacks which are sufficiently strong to resist being opened or torn during transport or in the course of charging or discharging. Discharging from torn sacks will be prohibited. (Art. 11).

It is forbidden to import seeds for sowing coming from regions where the pink cotton bollworm exists and this seed will be subject to all the dispositions indicated in the present Decree. (Art. 12).

Samples of no value arriving by post should only conform to the rules established in Art. 3 of the General Regulation of the Law of Phytosanitary Police. (Art. 13).

The Decree No. 1,031 of 30 September, 1935 [see this *Bulletin*, 1936, No. 5, p. 103-104] is revoked. (Art. 14). (*Diario Oficial de la República de Chile*, Santiago, 25 de abril de 1936, año I, IX, núm. 17,452, págs. 1234 y 1235).

Belgian Congo. — By Decree of the Commissioner of the province of Coquilhatville, No. 41/Agri., of 2 March, 1936, the disinfection of cotton seed, to be sown during the 1936-1937 season, is obligatory in all cotton factories in the Congo-Ubangi district, the apparatus now in use to be adopted.

The disinfection must be effected at the same time as ginning. (*Bulletin Administratif du Congo Belge*, Léopoldville-Kalina, 10 avril 1936, 25^{me} année, n° 7, p. 161).

* * By Ordinance of the Governor General, No. 38/Agri., dated 9 March, 1936, the dispositions of Ordinance No. 144 bis/Agri., of 31 October, 1935 [see this *Bulletin*, 1936, No. 5, p. 105], relative to the cultivation, purchase and trade of cotton in the free zones, are applicable to certain regions of the territory of Luisa. (*Ibid.*, 25 March, 1936, No. 6, p. 118-119).

* * By Ordinance of the Governor General, No. 38 bis/Agri., of 11 March, 1936, the dispositions of the Ordinance No. 144 bis/Agri., of 31 October, 1935, are applicable to a part of the territory of Banningville. (*Ibid.*, p. 119-120).

Scotland. — For the prevention of the introduction of the cherry fruit fly [*Rhagoletis cerasi*] the Importation of Raw Cherries (Scotland) Order of 1936, dated 9 May, 1936, contains restrictions on importation of these fruits grown in Spain, France and Germany. (*Statutory Rules and Orders*, 1936, No. ⁴²¹_{S. 16} *Destructive Insect and Pest, Scotland. The Importation of Raw Cherries (Scotland) Order of 1936. Dated May 9, 1936. London, 1936, 4 pp.*).

Spain. — By 'Orden' No. 78 of 3 April, 1936, a list is given of the countries which have ratified or adhered to the International Phylloxera Convention and final Protocol of 3 November, 1881, and the Declaration of 15 April, 1889. (*Gaceta de Madrid*, 7 abril 1936, año CCLXXV, tomo II, núm. 98, pág. 218).

France. — By Ministerial Decree of 3 April, 1936, the provisions of the Ministerial Decree of 28 May, 1924, fixing the conditions under which may be forwarded potatoes, tomatoes and aubergines, originating and coming from foreign countries where the Colorado beetle [*Leptinotarsa decemlineata*] is non-existent and imported by the port of Bordeaux, are applicable to importations of these products by all the ports situated in the zone infested by the Colorado beetle or in a zone of protection. This dispositions are also applicable in railway stations on terrestrial frontiers situated in the said zones and where transshipment of merchandise is unavoidable on account of a difference in the width of the permanent way. (Ministère de l'Agriculture. Direction de l'Agriculture. *Bulletin de l'Office de Renseignements Agricoles*, Paris, 15 avril 1936, année 1936, n° 8, p. 168).

Guatemala. — A Circular of the Direction General of Agriculture to the Departmental Political Chiefs, dated 5 February, 1936, prescribes the plan of control of the American coffee disease (*Stilbum flavidum*). (Secretaría de Agricultura. *Revista Agrícola*, Guatemala, 29 de febrero de 1936, vol. XIII, núm. 10, págs. 610 a 612).

Italy. — By Law No. 828 of 16 April, 1936, the Royal Decree-Law No. 2262 of 5 December, 1935 [see this *Bulletin*, 1936, No. 2, p. 33] relative to the control of 'mal secco' of citrus plants [*Deuterophoma tracheiphila*] in Sicily, has been made a Law. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 18 maggio 1936, anno 77º, n. 115, p. 1602).

*** An Interministerial Decree of 30 April, 1936, establishes the contributions to be granted by the State to persons interested in the control of citrus scale insects. (Ministero dell'Agricoltura e delle Foreste. *Bollettino Ufficiale*, Roma, 16 giugno 1936, anno VIII, n. 12, pp. 552-554).

*** By Ministerial Decree of 12 May, 1936, the Ministerial Decree of 1 April, 1936, relative to the compulsory control of the olive fly [*Dacus oleae*] in certain communes of the province of Messina [see this *Bulletin*, 1936, No. 6, p. 136] is revoked. (*Ibid.*, 1º giugno 1936, n. 11, p. 491).

*** By Ministerial Decree of 27 May, 1936, a Commission has been appointed charged with proposing the concession of contributions by the State in favour of owners whose citrus plantations have been subjected to treatment by hydrocyanic acid for the compulsory control of scale-insects of citrus trees during the season 1936, in conformity with the provisions contained in the Inter-Ministerial Decree of 30 April, 1936. (*Ibid.*, n. 12, p. 554).

*** By Royal Decree No. 1153 of 28 May, 1936, the Italian Entomological Society, with headquarters in Genoa, has been recognised as a moral entity and its statutes have been approved. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 25 giugno 1936, anno 77º, n. 146, p. 2054).

*** By Law No. 1221 of 28 May, 1936, has been made Law the Royal Decree-Law No. 510 of 9 March, 1936 authorising the Ministry of Agriculture and Forests to contribute to the expenditure incurred in the control of scale-insects of citrus trees [see this *Bulletin*, 1936, No. 6, p. 135]. (*Ibid.*, 2 luglio 1936, n. 151, p. 2130).

*** With a view to preventing the spread of 'mal secco' disease of citrus [*Deuterophoma tracheiphila*] it is forbidden, by Ministerial Decree of 29 May, 1936, to export from Sicily plants or parts of plants of lemon, grapefruit and citron. (*Ibid.*, 16 giugno 1936, n. 138, p. 1951).

*** By Ministerial Decree of 31 May, 1936, a competition has been opened, with a single prize of 5000 lire, for the preparation of a product, not

yet on the market, with a flower basis or extract of flowers of pyrethrum [*Chrysanthemum cinerariaefolium*], for use in the control of insects harmful to cultivated plants. (*Ibid.*, 10 luglio 1936, n. 158, pp. 2269-2270).

* * By Ministerial Decree of 5 June, 1936, the commune of Colli del Tronto, in the province of Ascoli Piceno, has been declared infested with grape phylloxera. (*Ibid.*, 18 giugno 1936, n. 140, p. 1982).

* * By two Ministerial Decrees of 20 June, 1936, the commune of Palombara Sabina, in the province of Rome and the commune of Offida, in the province of Ascoli Piceno, have been declared infested by grape phylloxera. (*Ibid.*, n. 151, p. 2141).

Morocco (French Zone). — A Decree of the Director of Waters and Forests, dated 16 March, 1936, authorises the destruction of wild boars causing great damage to the crops in the circle of Ouezzane. (Empire chérifien. Protectorat de la République française au Maroc. *Bulletin Officiel*, Rabat, 27 mars 1936, XXV^e année, n^o 1222, p. 381).

* * By Vizierial Decree of 17 March, 1936 (23 hija 1354) syndical associations for the control of plant parasites may be formed with a view to controlling the following parasites:—

Scale insects of fruit trees;

Shot-hole of stone fruits (*Clasterosporium carpophilum*, Aderh.);

Brown rot (*Sclerotinia cinerea*, Schrot.);

Peach leaf curl (*Exoascus deformans*, Berk.).

The associations may also undertake so-called 'winter' treatments of deciduous fruit trees. (*Ibid.*, 3 avril 1936, n^o 1223, p. 405).

* * A Decree of the Director General of Agriculture, dated 19 March, 1936, establishes the following:—

Art. 1. — Empty used sacks may be imported, apart from the ports and posts designated in Article 1 of the Decree of 31 March, 1933 [see this *Bulletin*, 1933, No. 6, p. 131], by the ports of Rabat, Mazagan, Safi and Mogador, whenever the total weight of the lots to be inspected amounts to 20 quintals. The inspection should be carried under the express condition that the importers interested bear the charges incurred in the costs of transport, retention at the port and costs of moving the merchandise, estimated according to the official tariffs then in force by the inspector of plant protection charged with sanitary inspection.

When fumigation or disinfection is ordered by the inspector of plant protection, the lots recognised to be contaminated are, according to the wishes of the consignee, returned or sent by sea to the ports of Casablanca or Port-Lyautey.

Art. 2. — Empty used sacks may be imported by the frontier post of Martimprey on condition that the inspection of these lots is carried out at the time of the plant protection inspector's visit or that the importer bears the costs of moving the material, established at 75 francs.

When fumigation or disinfection is ordered by the inspector of plant protection, the lots recognised to be infected are, according to the wishes of the consignee, returned or sent through Algerian territory, to the frontier-post of Oujda.

Art. 3. — The Chief of the Plant Protection Service is entrusted with the execution of the present Decree.

Art. 4. — The Decree of 15 November, 1935 [see this *Bulletin*, 1936, No. 1, pp. 11-12], regulating the importation into the French Zone of the Sherifian Empire of empty used sacks, is revoked. (*Ibid.*, n° 1222, p. 380).

* * By another Decree of the Director General of Agriculture, dated 26 March, 1936, the treatments to be carried out by the syndical associations for the control of plant parasites may be selected from among the following:—

(a) Against scale insects of citrus: fumigation with hydrocyanic acid; sprayings with mineral oil emulsions; sprayings with sodium resinate.

(b) Against scale insects of deciduous fruit trees during the resting period: sprayings with anthracene oil emulsion; sprayings with mineral oil emulsion;

(c) Against shot-hole of stone fruits, brown rot and peach leaf curl: sprayings with Bordeaux mixture, copper oxychloride or lime sulphur.

(d) For the so-called 'winter' treatments: anthracene oil emulsion or colouring matters.

The characteristics of these products should be as follows:—

(a) Hydrocyanic acid should be produced either by the action of sulphuric acid on sodium cyanide, or by powdering calcium cyanide, or by gasification of liquid hydrocyanic acid.

(b) Mineral oil should show a viscosity of 200° to 400° Barbey at a temperature of 35° C. and an unsulfonated residue above 80°.

(c) Sodium resinate should contain from 45 to 50 % of total resin, of which 20 to 25 % should be combined resin and 15 to 30 % free sodium carbonate.

(d) Lime sulphur: the concentrated lime sulphur should contain a proportion of 10 of lime to 20 of sulphur and, if in the liquid state, should have a minimum density of 1.200.

(e) Copper sulphate should contain at least 25 % of metallic copper.

(f) Copper oxychloride should contain at least 16 % of metallic copper.

(g) Bordeaux mixture: when already prepared Bordeaux mixture is used, it should contain at least 2 kilos of copper sulphate and 3 kilos of pure lime to 100 litres of water.

(h) Anthracene oil should contain at least 50 % of anthracene oil and at the most 2 % of phenols and 4 % of organic bases. (*Ibid.*, n° 1223, p. 405).

* * By Decree of the Director of Waters and Forests, dated 8 April, 1936, the destruction of wild boars is authorised in the territory of the post of civil control of El-Kelâa-des-Slès. (*Ibid.*, 17 avril 1936, n° 1225, p. 462).

* * A Decree of the Director of Waters and Forests, dated 15 April, 1936, authorises the destruction of rabbits and wild boars, causing great damage to crops in certain zones of the annex of civil control of Marchand. (*Ibid.*, 24 avril 1936, n° 1226, p. 500).

* * A Decree of the Director General of Agriculture, dated 27 May, 1936, establishes, *inter alia*, that all exported fresh fruit should be of sound quality. Fruit showing alterations due to parasitic or other origins will be eliminated as unfit for exportation.

Dry fruit exported should be of sound quality, without showing signs of internal or external parasites. (*Ibid.*, 5 juin 1936, n° 1232, p. 676-677).

Mexico. — By 'Acuerdo' of 4 February, 1936, the control of the cotton boll weevil [*Anthonomus grandis*] is regulated in the State of Sinaloa. (*Diario Oficial*), México, 28 abril de 1936, tomo XCV, núm. 50, págs. 4 y 5).

* * The 'Acuerdo' of 4 February, 1936, regulates the control of the cotton boll weevil (*Anthonomus grandis*) in the Republic. (*Ibid.*, 16 de mayo de 1936, tomo XCVI, núm. 12, págs. 2 y 3).

* * The 'Acuerdo' of 11 March, 1936, authorises the inspectors and employees of the Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture, to inspect the cotton crops in the frontier zone with a view to determining infestation by pests and also to supervise the measures for the control of same, including the sterilisation of seed, for which purpose they will examine and give their opinion on the plans for the sterilization apparatus. (*Ibid.*, 16 abril de 1936, núm. 40, págs. 3 y 4).

New Zealand. — By Order in Council of 1 April, 1936 silver poplar (*Populus nivea*) has been declared to be a noxious weed. (*The New Zealand Gazette*, Wellington, April 2, 1936, Numb. 27, p. 674).

Salvador. — The Decree No. 33 of 1 April, 1936, establishes preventive measures for the control of cotton pests. (*Diario Oficial*, San Salvador, 4 de abril de 1936, tomo 120, núm. 80, pág. 1165).

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On the subject of geographic distribution of *Empoasca* in Africa, the Author shows as reported in Uganda: *E. facialis* Jac. on *Dolichos* and *Canavalia ensiformis*; *E. dolichi* Paoli on *Arachis hypogaea*, *V. catjang*, *Gossypium* and *Dolichos*; *E. barbystyla* and *E. aequatorialis*. *E. facialis* and *E. dolichi* (on *Phaseolus*?) have also been reported in Nigeria].

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RICHTER, H. Die Gelbsucht der Sommerastern. *Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1936, 16. Jahrg., Nr. 7, S. 66-67, Abb. 1-3. [A virus disease of *Callistephus chinensis* observed for the first time in 1935 also at Berlin].

RUMBOLD, Caroline T. Three blue-staining fungi, including two new species, associated with bark beetles. *Journal of Agricultural Research*, Washington, D. C., 1936, Vol. 52, No. 6, pp. 419-437, figs. 1-10.

[*Ceratostomella ips* on *Pinus* spp. and *Larix occidentalis* associated with *Ips emarginatus*, *I. integer* and *I. oregoni*; *C. pseudotsugae* n. sp. on *Pseudotsuga*

taxifolia and *L. occidentalis* infested with *Dendroctonus pseudotsugae*; *C. piceaperda* n. sp. on *Picea glauca* infested with *D. piceaperda*. The technical descriptions and Latin diagnoses of the two new species are appended].

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[*Chaetoptelius vestitus* injurious to *Pistacia lentiscus* (province of Salerno) and to *P. vera* (Trento)].

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[Compiled according to specimens studied at the Phytopathological Benaki Institute during the years 1931-1933].

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[According to the Author the disease is caused in Greece by several animal and vegetable parasites].

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[*Sclerotinia cinerea*].

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[*Deuterophoma tracheiphila*].

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[Contains:—

1. Un cas de stérilité de l'olivier.

[Due to a lack of water].

2. Une maladie d'enroulement de la tomate.

[The cause of this disease has not been definitely established].

3. Les septorioses du pistachier.

[*Septoria pistacina*, *S. pistaciae*].

4. Un *Microsphaera* sur *Spartium junceum* L.

[*Microsphaera bäumleri*].

5. La pourriture grise des boutons floraux de la vigne.

[*Botrytis cinerea*].

6. Un *Phytophthora* sur *Saintpaulia ionantha*.

[*Phytophthora cactorum* ?].

7. Du *Polystigma ochraceum* de l'amandier.

8. Des périthèces d'*Uncinula necator* (Schw.) Burr. en Grèce].

SAREJANNI, J. A., et CORTZAS, C. B. Note sur le parasitisme de *Macrophomina phaseoli* (Maubl.) Ashby. *Annales de l'Institut Phytopathologique Benaki*, Kiphissia (Athènes), 1935, année 1, fasc. 3, p. 38-44. Bibliographie, p. 43-44.

[On cotton and other cultivated plants].

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[*Phytophthora parasitica* var. *nicotianae*].

SCHLENZ, Paul. Frostschäden im Obstbau. Ursache, Vorhersage, Abwehr, Bekämpfung und Heilung. Wiesbaden, Rud. Bechtold & Comp., [1935], 59 S., 5 Abb.

SCHWARTZ, Martin, and LUDEVIG, Karl. Der Gartendoktor. Schädlinge und Pflanzenkrankheiten ohne Vorkenntnisse erkennen und bekämpfen. Berlin, Verlag der Grünen Post, [1936], 116 S., 53 Abb.

[The object of this little manual is to enable persons uninstructed in the subject to 'recognise and control the diseases and pests of plants'.

The various diseases and pests are cited in alphabetical order, also the vegetables and fruit trees and the principal means of control. To each of the 406 words at the beginning of the line there corresponds a reference or explanatory note more or less long.

In this way the principal diseases and pests are reviewed and the best means of control are indicated. All scientific expressions have been avoided which might be difficult for the simple gardener to understand for whom the book is intended].

SEATON, H. L., and GRAY, G. F. Histological study of tissues from greenhouse tomatoes affected by blotchy ripening. *Journal of Agricultural Research*, Washington, D. C., 1936, Vol. 52, No. 3, pp. 217-224, pls. 1-9. Literature cited, pp. 223-224.

['Blotchy ripening' is a disorder which affects greenhouse tomatoes that ripen in May, June and July, and is characterized by a failure of areas of the outer fruit (pericarp) to develop and color normally].

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NOTES

Xth International Congress of European Beetroot-Growers. — The Xth International Congress of European Beetroot-Growers, which was held in Poland from 18 to 23 June, 1936, has given, *inter alia*, authority to the bureau to carry out immediately an enquiry into the methods of scientific and technical control of the beet leaf bug (*Piesma quadrata*) in collaboration with the Beetroot Research Institutes.